

D. Page 10, Example: After the last word of Example 1, "solution" add

-showed no fluorescence.-

This added text does not represent any new matter and is copied from Example 2 in which the same method for forming a mucin-DNA complex is described.

E. Page 15, replace the title "SUMMARY OF THE INVENTION" with -ABSTRACT-

F. CLAIMS: Please cancel Claim 10.

G. CLAIMS: Please amend the claims as follows:

- 8031
1. A mucin-DNA (deoxyribonucleic acid) complex formed by combining [said] mucin and [said] DNA [in any configuration] for the transport of said mucin-DNA complex into a cell [using either in vivo or in vitro methods].
 2. A mucin-biomolecules complex formed by combining [said] mucin and [said] biomolecules [in any configuration] for the transport of said mucin-biomolecules complex into a cell [using either in vivo or in vitro methods].
 3. [Mucin as in claims 1 and 2] A mucin-DNA complex as in claim 1, where said mucin [can be a combination of one or more different types of mucin molecules obtained from any biological or non-biological source] is selected from the group consisting of mucin from a biological source; mucin from a non-biological source; and, combinations thereof.
 4. [Mucin, as in claims 1 and 2] A mucin-DNA complex as in claim 1, where said mucin [can be in its native state or modified using any biological, chemical, enzymatic, heat-based or other means of modification] is selected from the group consisting of mucin in its native state; biologically modified mucin; chemically modified mucin; mucin modified by enzymes; mucin modified by heat-based methods; and, combinations thereof.
 5. [Mucin, as in claims 1 and 2] A mucin-DNA complex as in claim 1, where said mucin [can contain] contains sialic acid [and its derivatives].
- 14
- X

Sub B2 → 6. [DNA, as in claims 1 and 2] A mucin-DNA complex, as in claim 1, where said DNA [can be DNA or any other nucleic acid derived in a natural state, modified, or created synthetically and in any shape including linear, circular, single or double-stranded] is selected from the group consisting of DNA in its natural state; modified DNA; synthetically created DNA; linear DNA; circular DNA; single-stranded DNA; double-stranded DNA; and, combinations thereof.

7. [Biomolecules,] A mucin-biomolecules complex as in claim 2, where said biomolecules [may consist of one or more biomolecules] are selected from the group consisting of [, but not limited to,] DNA, RNA, nucleic acids, proteins, peptides, antibodies, glycolipids, glycoproteins, [natural, synthetic and] natural polymers, synthetic polymers, modified polymers, [or any combination] and combinations thereof.

Sub B3 → 8. [Biomolecules,] A mucin-biomolecules complex as in claim 2, where said biomolecules [can be derived in a natural state, modified, or created synthetically] are selected from the group consisting of biomolecules in their natural state; modified biomolecules; synthetically created biomolecules, and combinations thereof.

7 9. A mucin-DNA complex as in claim 1 [and mucin-biomolecules complex as in claim 2], where said complex [can be] is purified by [any chromatographic methods] a method selected from the group consisting of chromatographic methods, centrifugation methods, and, combinations thereof.

Sub B4 → 8 11. A mucin-DNA complex as in claim 1 [and mucin-biomolecules complex as in claim 2], where said mucin in said complex can undergo [any] modifications including [, but not limited to,] the addition, removal or [alternation or] alteration of the carbohydrate or protein components [or molecules of] comprising said mucin.

9 12. A mucin-DNA complex as in claim 1 [and mucin-biomolecules complex as in claim 2], where said mucin in said complex [can be] is modified to target specific cells as the targets of transfection.

13. A mucin-DNA complex as in claim 1 [and mucin-biomolecules complex as in claim 2], where said complex [can be] is used [in] for applications [including but not limited to] selected from the group consisting of gene therapy, cell repair, cell modification, [or] the production of specific proteins or enzymes in specific cells, and combinations thereof.

12. ~~A mucin-biomolecules complex as in claim 2, where said~~
mucin is selected from the group consisting of mucin from a biological source; mucin from a non-biological source; and, combinations thereof.

13. ~~A mucin-biomolecules complex as in claim 2, where said~~
mucin is selected from the group consisting of mucin in its native state; biologically modified mucin; chemically modified mucin; mucin modified by enzymes; mucin modified by heat-based methods; and, combinations thereof.

14. ~~A mucin-biomolecules complex as in claim 2, where said~~
mucin contains sialic acid.

15. ~~A mucin-biomolecules complex as in claim 2, where said~~
complex is purified by a method selected from the group consisting of chromatographic methods, centrifugation methods, and, combinations thereof.

16. ~~A mucin-biomolecules complex as in claim 2, where said~~
mucin in said complex can undergo modifications including the addition, removal or alteration of the carbohydrate or protein components comprising said mucin.

17. ~~A mucin-biomolecules complex as in claim 2, where said~~
mucin in said complex is modified to target specific cells as the targets of transfection.

18. ~~A mucin-biomolecules complex as in claim 2, where said~~
complex is used for applications selected from the group consisting of gene therapy, cell repair, cell modification, the production of specific proteins or enzymes in specific cells, and combinations thereof.